You forwarded this message on 8/8/2006 4:07 PM.

Alred, Steve (NIH/NCI) [C]

From: Donald Kacher [donald.kacher@oracle.com] **Sent:** Tue 8/8/2006 2:28 PM
To: Warzel, Denise (NIH/NCI) [E]
Cc: Andonyadis, Christo (NIH/NCI) [E]; Alred, Steve (NIH/NCI) [C]; Mead Charlie; John Rees
Subject: Re: eDCI Global Definitions schema
Attachments:

Hi Denise -
Answers below...
- Don

Warzel, Denise (NIH/NCI) [E] wrote:

> Thanks Don.
>
> Is this final ?

This schema corresponds to the UML model that we discussed at our last meeting. Unless you have further changes you feel are needed to the UML, then we should consider it version 1.0. It will no doubt have to be revised once we try pushing some actual data around, but let's get to that point, and then work on v1.1.

> And is this the essence of what you have proposed -
>
> GlobalDefinition XML contains the eDCI

No. The XML needed to represent a DCI is split into two documents. Each part has its own schema. This happened because it was determined that part of the eDCI domain (the Global Definitions part) was not part of the domain covered by the HL7 Reference Information Model (RIM). The RIM is intended to describe interrelationships among objects; definitions of the objects (i.e., vocabularies) are outside the province of the RIM. HL7 has developed a different schema for describing vocabularies. This is the Model Interchange Format (MIF). The decision was that Global Definitions would be expressed in xml compliant with MIF, and the remainder of the eDCI domain (the Instrument) would be expressed in xml compliant with a schema derived from the RIM. The Instrument schema has a formal name of PORT_HD050001HT01.xsd, following HL7 conventions. The two pieces of XML can travel together in one message: the Instrument xml is the message payload; the GlobalDefinition xml goes as an attachment. In actual fact, the net result is a single xml document that wraps both the payload and attachment.

Now, as I mentioned in my earlier note, writing to MIF has its challenges. But it is the target schema for describing Global Definitions in an HL7 message Attachment. To simplify matters, I've defined an intermediate schema, gd_v1.xsd, which is very similar, structurally, to the UML model for Global Definitions. And I've written the gd2mif.xsl stylesheet to automatically convert xml compliant with gd_v1.xsd into xml compliant with MIF, saving you the trouble of mapping Global Definition information directly to MIF.

So, to represent a DCI, you need to

- construct message-root xml (I don't know the syntax for this yet, but will find out). This xml has one element where you attach the payload, and another where you can attach an Attachment.
- construct xml compliant with gd_v1.xsd for the Global Definitions portion of the information you want to send. Let's call that gd.xml.
- transform gd.xml into xml compliant with MIF, using gd2mif.xsl. Let's call the result gd_mif.xml.
- attach gd_mif.xml to the message-root xml as an Attachment
- construct xml compliant with PORT_HD050001HT01 for the Instrument portion of the information you want to send, and attach it as the payload.

To make things more interesting, it is possible to send Global Definitions without an Instrument, and an Instrument without Global Definitions (though the Instrument definition will be meaningless unless it has been preceded by the relevant Global Definitions). But that doesn't change the logic outlined above. Just omit the unneeded steps -- you still end up with a valid message.

To send as an HL7 message:

caDSR maps Form metadata to the eDCI GlobalDefinition schema (XML)

see above.

We convert GlobalDefintion into HL7 message format using the GlobalDef_to_MIF style sheet.

see above

To receive, reverse..

Right, with elaborations noted above.

Correct?

Denise
303-722-9446

From: Donald Kacher [mailto:donald.kacher@oracle.com]
Sent: Monday, August 07, 2006 4:29 PM
To: Alred, Steve (NIH/NCI) [C]
Cc: Warzel, Denise (NIH/NCI) [E]; Andonyadis, Christo (NIH/NCI) [E]; John Rees; ganesh singh; Mead Charlie; Christina Hansson; Ganga Karthik
Subject: eDCI Global Definitions schema

Hi Steve -
Here's an update on the schema for representing eDCI Global Definitions.

After a lot of time spent trying to represent Global Definitions in MIF, I've concluded that, while it's possible, the fit is not tidy. . To make it easier to read and write Global Definitions, I'm recommending that we use a two-tier approach. Here's the explanation:

The MIF Schema is not a perfect fit for Global Definitions, for two reasons:

1. The MIF Schema covers a larger domain than Global Definitions, so it allows elements and attributes that should not be included in a Global Definition document instance
2. The MIF Schema requires certain elements and attributes that are not present in the Global Definition Domain. Creators of MIF document instances that represent Global Definitions will have to include dummy values for these elements and attribtues. Receivers of MIF document instances that represent Global Definitions will have to disregard these dummy values when consuming the document instance.

To make it easier to produce and consume the MIF-compliant documents, I have specified an intermediate schema, called GlobalDefinitions. This schema maps very closely to the static UML model. We will supply xsl transform stylesheets to automate the process of transforming GlobalDefinition documents to and from MIF documents. This will save generators and consumers from having to contend with the two problems listed above.
An application implementing the storage of Global Definitions can build data

structures to align with the Global Definition UML model.
An application sending Global Definition information is responsible for generating XML that conforms to the MIF XSD. It can do this in a two-phase process:

1. Represent the Global Definition information in XML conforming to the GlobalDefinitions schema.
2. Transform that XML into MIF-conformant XML by using the GlobalDef_to_MIF stylesheet.

An application receiving Global Definition information is responsible for accepting XML that conforms to the MIF XSD. It can do this in a two-phase process:

1. Transform the incoming MIF-conformant XML into GlobalDefinition-conformant XML, by using the MIF_to_GlobalDef stylesheet.
2. Parse, validate and consume the Global Definition XML, persisting the information into its registry.

I've attached a copy of the GlobalDefinition schema, version 1.0. You can write caDSR definitions out in xml that conforms to this schema.

I've nearly finished writing the stylesheetsthat will convert GlobalDefinition XML to MIF, and vice versa. You'll need the first, in order to convert your generated Global Definition XML into MIF for inclusion in the Attachment to an eDCI Definition message. But you don' need that right away. I'll send the stylesheets on as soon as I've validated them.

Thanks,
- Don

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